UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

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H. CRISTINA CHEN-OSTER, SHANNA        :
ORLICH, ALLISON GAMBA and MARY        :
DE LUIS,                              :
                                      :
                  Plaintiffs,         :      10 Civ. 6950 (AT) (RWL)
                                      :
          v.                          :
                                      :
GOLDMAN SACHS & CO. and THE           :
GOLDMAN SACHS GROUP, INC.,            :
                                      :
                  Defendants.         :
                                      :
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DECLARATION OF MICHAEL BECKER

I, Michael Becker, hereby declare under penalty of perjury that the following

is true and correct:

1.   I am employed as a Vice President by Goldman Sachs Services LLC, an

affiliate of The Goldman Sachs Group, Inc. and Goldman Sachs & Co. LLC ("Goldman Sachs"

or the "Firm"). I provide this declaration to explain the process followed to identify recipients of

particular e-mails sent at various times over the past several years that described this lawsuit and

asked recipients to retain documents related to this lawsuit. This declaration is based on my

personal knowledge, and I would be competent to testify to the following facts if called upon to

do so.

2.   I am currently a senior member of the Directory Services Engineering

team within the Firm's Technology Division, with primary responsibility over Directory Data

Management, Identity Management and Directory Services. From approximately June 1999 to

June 2012, I worked as a software developer for the Archon Group, which was a subsidiary of

Goldman Sachs during that period of time. My final position at the Archon Group was Senior

Manager. In approximately July 2012, the Archon Group was incorporated into Goldman Sachs and I became a Vice President of the Firm.

3.   I graduated from Embry-Riddle Aeronautical University in 1998 with a Bachelor of Science in Aviation Computer Science. I have been a professional computer programmer ever since, so I now have more than 20 years of programming experience. After graduation, I worked from 1998 through 1999 as a technical staff member for Rockwell Collins in Richardson, Texas. I joined the Archon Group after working for Rockwell Collins.

4.   Within Goldman Sachs, my organization is a subset of the Security Platform Engineering department, which is responsible for, among other things, the Firm's identity and user platforms. We are responsible for the Firm's global Corporate Directory, Active Directory, and several other databases that are used to identify employees and to store data associated with the Firm's employees at any given point in time.

5.   Corporate Directory is the main repository used to identify employees of the Firm. I am familiar with Corporate Directory and the data that is maintained in that system. Corporate Directory is employed and relied on in the normal course of business to maintain a full list of individuals employed by the Firm at any given time.

6.   Corporate Directory stores certain information about each employee, including the employee identification number ("EIN") assigned to each employee. EINs are unique identifiers assigned to each employee. EINs are not re-used by the Firm after an individual's employment ends. Corporate Directory also includes email address information, but it is not the main repository for email accounts at the Firm.

7.   The data in Corporate Directory is updated on a daily basis to reflect current information drawn from several other data sources maintained by the Firm. The Firm

uses automated computer processes to synchronize data from the Firm's key identification databases and to validate that this data are published to Corporate Directory. Active Directory, which my team is also responsible for overseeing, is one of the data sources that provides information stored in Corporate Directory.

8.   Active Directory is a Microsoft product. Active Directory is the main repository for e-mail accounts at the Firm. I am familiar with Active Directory and the data maintained in that system. Active Directory is employed and relied on in the normal course of business to maintain a full list of active email addresses at the Firm at any given time and the user accounts associated with the email addresses.

9.   With limited exceptions, an employee has one Firm e-mail user account, and therefore one Active Directory profile. Certain Technology Division employees may have more than one e-mail account and, as a result, more than one profile within Active Directory, but this would be the case only rarely for an employee outside the Technology Division. The email address and user account data in Active Directory is updated on a daily basis to reflect who is currently employed by the Firm. Active Directory contains all email addresses associated with each employee account. For example, my account in Active Directory may include the email address michael.becker@gs.com and the email address Michael.Becker@ny.email.gs.com.

10.   Unlike EINs, e-mail addresses are not unique identifiers. Email addresses may be re-used after an individual's employment ends and another individual with the same or a similar name joins the Firm. For example, my EIN will not be assigned to any other employee if I leave the Firm, but the e-mail addresses that are currently assigned to me could be reassigned if a new employee named Michael Becker joins Goldman Sachs after my departure from the Firm.

11.   During the normal course of business, automated computer programs take a daily extract of certain data in Corporate Directory, Active Directory, and other key employee identity databases at approximately midnight Eastern Standard Time and store the extracts in a data warehouse. These daily extracts are stored in two data warehouses, one for data from 2010 through 2013, which is based on a Microsoft SQL server database, and one for data from 2014 through 2018, which is based on an IBM DB2 database. Pursuant to the Firm's practice, these daily extracts are preserved and are not overwritten.

12.   Each night, automated computer programs generate reports based on these daily extracts and send an automated email to the Client Services team. The following day, employees in the Client Services team review these reports to identify any discrepancies across the data and to verify that changes made in each database on the previous day are reflected consistently and accurately in the other databases, including Active Directory and Corporate Directory. For example, if the extract for Corporate Directory notes that an employee is no longer active within the firm, this will be compared to the database that maintains building access rights to confirm that the employee's building access card was deactivated and to the Active Directory extract to ensure that the employee's email account was also deactivated. The storage of daily extracts from the Firm's identification databases and the resolution of any conflicts between the extracts are part of the Firm's logical security controls, which require that only authorized individuals have access to the Firm's physical locations and electronically stored data.

13.   In approximately December 2018, the Firm's Legal Department sent me an Excel spreadsheet generated by Joseph Yanagisawa, a colleague who works in the Technology Division. I was informed that the spreadsheet listed all e-mail addresses that had

-4-

received legal hold notices that were sent on eight specified dates and times. I was asked to provide the EINs associated with each e-mail address on the date the legal hold notice was sent.

14.   The Firm does not have a single data set that associates EINs with all possible e-mail addresses that an employee may have. However, Active Directory extracts can be used to associate e-mail addresses associated with employees on a specific date with accounts in the Corporate Directory extracts from the same date, and the Corporate Directory accounts do include EINs. This means that I could search the daily extracts taken from Active Directory and Corporate Directory to extract the EIN associated with a particular email address on a particular date.

15.   To do this, I developed, with limited assistance from a member of my team, an automated computer program that: (1) extracted the e-mail addresses provided in the Excel spreadsheet prepared by Mr. Yanagisawa; (2) searched the Corporate Directory extracts to find a user profile associated with each e-mail address on the particular dates that each legal hold notice was sent, and if the email address was found in Corporate Directory, the program could then extract the EIN associated with the email address from Corporate Directory; (3) if the email address was not found in Corporate Directory, the program then searched Active Directory for the email address; (4) if the email address was found in Active Directory, the program then searched the Corporate Directory extracts to find the Corporate Directory account associated with the Active Directory account identified in step 3 on the same date and extracted the corresponding EIN from the Corporate Directory account, and (5) all the resulting EINs were then imported into the report from Mr. Yanagisawa. The resulting report is attached as Exhibit 1.

16.   To confirm the accuracy of the data imported into the report in Exhibit 1, I first created a program to confirm that the format of the email addresses in the spreadsheet provided from Mr. Yanagisawa would properly associate with the email addresses maintained in Active Directory and Corporate Directory. The results of this program confirmed that the addresses in Mr. Yanagisawa's report were valid and are shown in column F of Exhibit 1 ("Address Valid"). I re-ran my program several times and manually reviewed the Active Directory and Corporate Directory extracts to confirm whether email addresses that received a hold notice were associated with EINs on the date the hold notices were received. Email addresses that were not associated with an EIN on those dates are identified as "False" in column H ("Identity Resolved") of Exhibit 1.

17.   This Exhibit does not reflect my or any other individual's interpretation of any data and did not require the exercise of judgment to compile, beyond the skills needed to develop a computer program to extract the data. The computer program that I wrote was designed simply to match an employee's e-mail address to her EIN through an automated rather than a manual process.

18.   In the course of Goldman Sachs's business, I routinely write database queries or other computer code to extract information from Corporate Directory and Active Directory accounts.

I declare under penalty of perjury and pursuant to 28 U.S.C. § 1746 that the foregoing is true and correct.

Date: June 6, 2019
        Dallas, Texas

Michael Becker

-6-